CLAIMS

1. An electronic device comprising

a touch pad (106),

a processing unit (600) connected to the touch pad (106) over a data transmission connection, the processing unit (600) being configured to determine a virtual keyboard (104) for the touch pad (106) and a tactile appearance of the keyboard (104), receive information generated by the pressing of a keyboard (104) key and identify the key that was pressed on the basis of the information, and

a feedback unit (612) connected to the processing unit (600) over a data transmission connection, the feedback unit (612) being configured to provide tactile feedback on the keyboard (104) use for the device user,

characterized in that

the processing unit (600) is further configured to collect information on the key presses and carry out an analysis of them, and re-determine the tactile appearance of the keyboard (104) on the basis of the collected information and the analysis carried out so as to make the keyboard more ergonomic for the user, which makes it easier to use the keyboard (104) and/or the pressing of a wrong key less likely.

2. A device according to claim 1, **characterized** in that the information comprises at least one of the following: key press coordinates, keyboard control data and force of the key press.

3. A device according to claim 1, **characterized** in that the analysis is used to generate at least one of the following results: coordinates of an acceptable key press, coordinates of a rejected key press, coordinates of a corrected key press, time used for successive key presses, mean of the coordinates of presses of one key, variance of the presses of one key, another statistical variable describing the presses of one key.

4. A device according to claim 3, **characterized** in that the processing unit is configured to identify a press at the border of two keys or outside the keyboard as a rejected key press.

5. A device according to claim 3, **characterized** in that the processing unit is configured to identify the following sequence as a corrected key press: the first key press is deleted by the delete key, after which another key is pressed.

6. A device according to any one of the preceding claims, **characterized** in that the tactile keyboard appearance comprises at least one of the following: key size, key shape and key location.

7. A device according to any one of the preceding claims, **characterized** in that the processing unit is configured to define limits for the tactile keyboard appearance that the tactile keyboard appearance cannot exceed.

8. A device according to claim 6, **characterized** in that the processing unit is configured to change the key shape in the main directions.

9. A device according to claim 6, **characterized** in that the processing unit is configured to change the key shape arbitrarily.

10. A device according to claim 6, **characterized** in that the processing unit is configured to move the key centre point according to the mean of the coordinates of key presses.

11. A device according to claim 6, **characterized** in that the processing unit is configured to change the key shape according to the variance of the coordinates of key presses.

12. A device according to claim 6, **characterized** in that the processing unit is configured to change the key shape using vector quantization, expectation maximization, clustering or another suitable adaptive and/or optimizing method.

13. A device according to any one of the preceding claims, **characterized** in that the processing unit is configured to determine the tactile keyboard appearance by giving a first tactile feedback on a key press.

14. A device according to claim 13, **characterized** in that the processing unit is configured to determine various first tactile feedbacks, a separate one either for each key or for each key group.

15. A device according to any one of the preceding claims, **characterized** in that the processing unit is configured to determine the tactile keyboard appearance by giving a second tactile feedback on the key when it is not pressed.

16. A device according to any one of the preceding claims, **characterized** in that the processing unit is configured to determine the tactile keyboard appearance by giving a third tactile feedback on an area which is outside the keys but belongs to the tactile keyboard appearance.

17. A device according to any one of the preceding claims, **characterized** in that the processing unit is configured to determine the visual keyboard appearance and re-determine the visual keyboard appearance on the basis of the collected information and the analysis carried out so as to make the keyboard more ergonomic for the user, which makes it easier to use the keyboard and/or the pressing of a wrong key less likely.

18. A device according to claim 17, **characterized** in that the processing unit is configured to determine the tactile keyboard appearance and the visual keyboard appearance so that they correspond to each other.

19. A method of managing a virtual keyboard of an electronic device, the method comprising:

determining (1002) a tactile appearance of the virtual keyboard; and

receiving (1004) information generated by the pressing of a keyboard key and identifying (1006) the key pressed on the basis of the information;

characterized in that the method further comprises:

collecting (1008) information on the key presses and carrying out (1012) an analysis of them; and

re-determining (1014) the tactile appearance of the keyboard on the basis of the collected information and the analysis carried out so as to make the keyboard more ergonomic for the user, which makes the use of the keyboard easier and/or the pressing of a wrong key less likely.

20. A method according to claim 19, **characterized** in that the information comprises at least one of the following: key press coordinates, keyboard control data and force of the key press.

21. A method according to preceding claim 19 or 20, **characterized** in that the analysis is used to generate at least one of the following results: coordinates of an accepted key press, coordinates of a rejected key press, coordinates of a corrected key press, time used for successive key presses, mean of the coordinates of the presses of one key, variance of the presses of one key, another statistical variable describing the presses of one key.

22. A method according to claim 21, **characterized** in that the method further comprises: identifying a press at the border of two keys or outside the keyboard as a rejected key press.

23. A method according to claim 21, **characterized** in that the method further comprises: identifying the following sequence as a corrected key press: the first key press is deleted by the delete key, after which another key is pressed.

24. A method according to any one of claims 19 to 23, **characterized** in that the tactile keyboard appearance comprises at least one of the following: key size, key shape and key location.

25. A method according to any one of claims 19 to 24, **characterized** in that the method further comprises: defining limits for the keyboard appearance that the keyboard appearance cannot exceed.

26. A method according to claim 24, **characterized** in that the method further comprises: changing the key shape in the main directions.

27. A method according to claim 24, **characterized** in that the method further comprises: changing the key shape arbitrarily.

28. A method according to claim 24, **characterized** in that the method further comprises: moving the key centre point according to the mean of the coordinates of key presses.

29. A method according to claim 24, **characterized** in that the method further comprises: changing the key shape according to the variance of the coordinates of key presses.

30. A method according to claim 24, **characterized** in that the method further comprises: changing the key shape using vector quantization, expectation maximization, clustering or another suitable adaptive and/or optimizing method.

31. A method according to any one of preceding claims 19 to 30, **characterized** in that the method further comprises: determining the tactile keyboard appearance by giving a first tactile feedback on a key press.

32. A device according to claim 31, **characterized** in that the method further comprises: determining various first feedbacks, a separate one either for each key or for each key group.

33. A method according to any one of preceding claims 19 to 32, **characterized** in that the method further comprises: determining the tactile keyboard appearance by giving a second tactile feedback on the key when it is not pressed.

34. A method according to any one of preceding claims 19 to 33, **characterized** in that the method further comprises: determining the

tactile keyboard appearance by giving a third tactile feedback on an area which is outside the keys but belongs to the tactile keyboard appearance.

35. A method according to any one of preceding claims 19 to 34, **characterized** in that the method further comprises: determining the visual keyboard appearance and re-determining the visual keyboard appearance on the basis of the collected information and the analysis carried out so as to make the keyboard more ergonomic for the user, which makes it easier to use the keyboard and/or the pressing of a wrong key less likely.

36. A method according to claim 35, **characterized** in that the method further comprises: determining the tactile keyboard appearance and the visual keyboard appearance so that they correspond to each other.